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National Aeronautics and
Space Administration

MSFC-STD-383
REVISION E
EFFECTIVE DATE: OCTOBER 27, 2004

George C. Marshall Space Flight Center
Marshall Space Flight Center, Alabama 35812

El 42

MULTIPROGRAM/PROJECT COMMON-USE DOCUMENT

STANDARD FOR RUBBER STAMPING OF ELECTRICAL EQUIPMENT AND COMPONENTS

(Approved for Public Release; Distribution is Unlimited)

Multiprogram/Project Common-Use Document or Program/Project Name EI 42		
Title: STANDARD FOR RUBBER STAMPING OF ELECTRICAL EQUIPMENT AND COMPONENTS	Document No.: MSFC-STD-383	Revision: E
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DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
REVISION	D	4/17/01	GENERAL REVISION-REWRITTEN AND FORMATTED PER MWI 7120.4 REVISED APPENDIX A TO REFLECT CURRENT SPECIFICATIONS.
REVISION	E	TBD	GENERAL REVISION-REWRITTEN AND FORMATTED PER MWI 7120.4.

CHECK THE MASTER LIST. VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

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1. PURPOSE

1.1. This standard establishes the criteria for rubber stamping of electrical equipment and components.

2. APPLICABLE DOCUMENTS

2.1. SPECIFICATIONS

Federal

A-A-51693 Alcohol, Dehydrated, USP

A-A-56032 Ink, Marking, Epoxy Base

2.2. STANDARDS

American National Standard

ANSI/IEEE STD 200 Reference Designations for Electrical and Electronics Parts and Equipments

MIL-STD-810 Environmental Test Methods and Engineering Guidelines

2.3. HANDBOOKS

MSFC DOCUMENTS

MSFC-HDBK-527 Material Selection Guide for MSFC Spacelab Payloads
MPG-8715.1 Marshall Safety, Health, and Environmental (SHE) Program

3. GENERAL REQUIREMENTS

3.1 Character Location - When space permits, the characters shall be applied to insure optimum discernability.

3.2 Cleaning Agent - The surface to be stamped shall be cleaned with alcohol conforming to Specification A-A-51693.

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3.3 Workmanship - The finished marking shall be free from ragged edges, imperfect or misaligned characters, closed characters, smears, and excess ink.

4. DETAILED REQUIREMENTS

4.1 Character Style - The character style shall be Gothic style capitals. Roman numerals and lower case shall be limited to special applications.

4.2 Character Size - The characters shall be .125 (nominal) inches high, unless otherwise specified. When space is limited, smaller type is acceptable, provided legibility is not affected.

4.3 Character Spacing - All letters in words or groups of characters shall be evenly spaced and neatly aligned. For a single word or similar group of characters, the spacing between straight characters shall range between 1/12 minimum and 1/4 maximum of the character height.

4.4 Character Line Width - The character line width shall be between 1/6 to 1/8 of the character height, except for .500-inch characters which range between 1/10 to 1/12 of the character height.

4.5 Tolerance - The tolerances for two place decimal dimensions shall be plus or minus .03 inch and for three place decimal dimensions shall be plus or minus .010 inch.

4.6 Word Spacing - The spacing between words shall range between 5/8 to 3/4 of the letter height, depending upon the characters being separated.

4.7 Ink

4.7.1 For ground support equipment, unless otherwise specified, the ink shall be an approved epoxy-based paste per A-A-56032 Type I or II. Standard color is black. Appendix A Type I is an approved material.

4.7.2 For flight equipment, unless otherwise specified, the ink shall be an approved epoxy-based paste per A-A-56032 Type II. For black, Appendix A, Type II ink is an approved material. For white, Appendix A, Type III ink is an approved material.

4.7.3 For flight equipment, the ink specified in 4.7.2 shall be overcoated with an approved material to prevent outgassing of the ink. If specified ink meets outgassing requirements of the program, overcoating is allowed to be omitted by statement on using documentation. Appendix A, Type IV epoxy is an approved material.

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4.8 Color - The color of the characters shall provide adequate contrast with the surface color of the part and have uniform density. Applicable drawing shall specify color if other than black.

4.9 Dimensions - For the purpose of this standard, the marking location and letter size or spacing dimensions shall be shown in decimal inches on the applicable drawing. (Dimensions shall apply from outside to outside of the character, not the centerline.)

4.9.1 Location of Reference Designation markings – Reference designations shall be placed to indicate the approximate physical location of the parts represented, yet shall be readily visible without disturbing other parts. This requirement is primarily intended to preclude the loss of physical location identification when a part or assembly has been removed for maintenance purposes. All reference designation marking shall be consistent with the requirements of Standard ANSI Y32.16-1975 (IEEE STD 200-1975).

5 STAMPING NOTE EXAMPLE

“RUBBER STAMP PER MSFC-STD-383, FLIGHT” on documentation results in .125 high characters of UGLZ 8000 Black Epoxy Ink overcoated with Armstrong C-1 epoxy.

6 CANCELLATION

MSFC-STD-383C dated August 10, 1987
MSFC-STD-383D dated April 17, 2001

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APPENDIX A APPROVED INKS AND THEIR SOURCES

TYPE I INK (for GSE)

REQUIREMENTS:

- 1 Materials - The black epoxy marking ink shall meet the fungus resistance requirements of Specification MIL-STD-810 method 508.
- 2 Color - The color shall be black.
- 3 Product Identification - The vendor part number shall be clearly marked on the epoxy marking ink container.
- 4 Workmanship - The epoxy marking ink shall be the equivalent of Part Number M-O-N Black, Series M ink manufactured by Enthone, Oak Lawn, Illinois.
- 5 Ordering Data - The procuring activity shall specify the container size on the purchase order.

Vendor Part Number: M-O-N Black, Series M, Black Ink-A, Catalyst

Vendor Address:

Enthone
9809 Industrial Drive
Oak Lawn, Illinois 60455-2306

Vendor CAGE Code

5F863

- 6 Other materials allowed are listed in MSFC-HDBK-527 and approved by MSFC.

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TYPE II INK (for flight equipment) BLACK

REQUIREMENTS:

- 1 Materials - The black epoxy marking ink shall meet the fungus resistance requirements of Specification MIL-STD-810 method 508.
- 2 Color - The color shall be black.
- 3 Product Identification - The vendor part number shall be clearly marked on the epoxy marking ink container.
- 4 Workmanship - The epoxy marking ink shall be the equivalent of Part Number UGLZ-8000 Black and the vendor specified catalyst, Union Ink Company.
- 5 Ordering Data - The procuring activity shall specify the container size on the purchase order.

Vendor Part Number: UGLZ-8000 Black Ink with vendor recommended catalyst

Vendor Address:

Union Ink Company, Inc
453 Broad Avenue
Ridgefield, NJ 07657-2329

Vendor CAGE Code:

29642

- 6 Notes – UGLZ-8000 does not adhere to Electroless Nickel finishes. M-O-N/CAT 20/A Black Ink from Enthone, CAGE code 5F863 shall be designated on documentation.
- 7 Other materials allowed are listed in MSFC-HDBK-527 and approved by MSFC.

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TYPE III INK (for flight equipment) White

REQUIREMENTS:

- 1 Materials - The white epoxy marking ink shall meet the fungus resistance requirements of Specification MIL-STD-810 method 508.
- 2 Color - The color shall be white.
- 3 Product Identification - The vendor part number shall be clearly marked on the epoxy marking ink container.
- 4 Workmanship - The epoxy marking ink shall be the equivalent of Part Number UGLZ-1000 White and the vendor specified catalyst, Union Ink Company.
- 5 Ordering Data - The procuring activity shall specify the container size on the purchase order.

Vendor Part Number: UGLZ-1000 White Ink with vendor recommended catalyst

Vendor Address:

Union Ink Company, Inc
453 Broad Avenue
Ridgefield, NJ 07657-2329

Vendor CAGE Code:

29642

- 6 Other materials allowed are listed in MSFC-HDBK-527 and approved by MSFC.

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TYPE IV OVERCOAT (for flight)

REQUIREMENTS:

- 1 Materials - The epoxy overcoat shall meet the fungus resistance requirements of Specification MIL-STD-810 method 508.
- 2 Color - The color shall be natural.
- 3 Product Identification - The vendor part number shall be clearly marked on the epoxy container.
- 4 Workmanship - The epoxy overcoat shall be the equivalent of Part Number C-1 and Activator A, Armstrong Products Company, Inc.
- 5 Ordering Data - The procuring activity shall specify the container size on the purchase order.

Vendor Part Number: Resin, C-1 with Activator A

Vendor Address:

Armstrong Products Company
Div of Polymer Industries, Inc
P. O. Box 657
407 Argonne Rd.
Warsaw, In 46580-3811

Vendor CAGE Code:

98911

- 6 Other materials allowed are listed in MSFC-HDBK-527 and approved by MSFC. If ink meets program specifications without overcoating, the overcoating can be omitted by stating "omit overcoating" on the documentation.

MSFC DOCUMENTATION REPOSITORY - DOCUMENT INPUT RECORD

I. GENERAL INFORMATION

1. APPROVED PROJECT: MU-TI PROGRAM/PROJECT	2. DOCUMENT/DRAWING NO.: MSFC-STD-383	3. CONTROL NUMBER:	4. RELEASE DATE: 12/14/2004	5. SUBMITTAL DATE: 12/14/2004
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8. CONTRACT NUMBER/PERFORMING ACTIVITY:	9. DRD NUMBER:	10. DPOVRL/DRD NUMBER:		
11. DISPOSITION AUTHORITY (Check One): <input checked="" type="checkbox"/> Official Record - NRRS 85/A1(a) <input type="checkbox"/> Reference Copy - NRRS 85/A/3 (destroy when no longer needed)	12. SUBMITTAL AUTHORITY: JEFF D. BROWN/EI42	13. RELEASING AUTHORITY: JEFF D. BROWN/EI42		
14. SPECIAL INSTRUCTIONS:				
15. CONTRACTOR/SUBMITTING ORGANIZATION, ADDRESS AND PHONE NUMBER: MSFC		16. ORIGINATING NASA CENTER: MSFC		
		17. OFFICE OF PRIMARY RESPONSIBILITY: I&PS		
18. PROGRAMMATIC CODE (5 DIGITS): 336-38-11		19. NUMBER OF PAGES: 14 10		

II. ENGINEERING DRAWINGS

20. REVISION:	21. ENGINEERING ORDER:	22. PARTS LIST:	23. CCBQ:
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III. REPORTS, SPECIFICATIONS, ETC.

24. REVISION: E	25. CHANGE:	26. VOLUME:	27. BOOK:	28. PART:	29. SECTION:
30. ISSUE:	31. ANNEX:	32. SCN:	33. DCN:	34. AMENDMENT:	
35. APPENDIX:	36. ADDENDUM:	37. CCBQ:	38. CODE ID:	39. IRN:	

IV. EXPORT AND DISTRIBUTION RESTRICTIONS

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|---|---|
| <input type="checkbox"/> Privacy Act (see MWI 1382.1) | <input type="checkbox"/> EAR (see MPG 2220.1) |
| <input type="checkbox"/> Proprietary (see MPD 2210.1) | <input type="checkbox"/> Other ACI (see NPG 1620.1 and MPG 1600.1) |
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V. ORIGINATING ORGANIZATION APPROVAL

40. CRG CODE: EI42	41. PHONE NUMBER: 544-3720	42. NAME: JEFF D. BROWN	43. SIGNATURE/DATE: <i>Jeff Brown</i> / 12-14-04
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VI. TO BE COMPLETED BY MSFC DOCUMENTATION REPOSITORY

44. RECEIVED BY: <i>Kim Miller</i>	45. DATE RECEIVED: 12/20/04	46. WORK ORDER: 03-00135-5
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